OWNER'S MANUAL

TEAC®

A-6300

Stereo Tape Deck

51012600 PRINTED IN JAPAN 1278G1.5•D-2196P

The A-6300 is the result of a lot of careful thought and effort that TEAC put into the design of this superb Semi-professional 4-track Stereo Tape Deck. This manual is also a part of TEAC's total commitment to supply you with the very best.

Note some of the special features of this manual.

A) The large center fold-out that gives the experienced recordist almost all the essential information he needs to operate this deck.

B) Supplemental sections to explain basic skills and theory such as tape track configurations, tape splicing, choice of tape, etc.

C) An additional section to explain more advanced theory such as high level recording, use of VU meter, and detailed descriptions of control functions and special features of the deck.

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Service & Warranty

SERVICE

Our investigation has shown that approximately 40% of the calls for service immediately after purchases resulted from improper operation of the equipment. Therefore, it is important that you thoroughly read and understand this manual before placing the unit in operation. Failure to properly clean your deck will result in degradation of performance. Careful observation of the cleaning and servicing hints contained in this manual will contribute to a lengthened, trouble-free unit life. Please consult the Corrective Action Guide chart before seeking service as most common problems are covered by this chart.

Should your tape deck need repair, contact the dealer where it was purchased or the nearest TEAC Authorized Service Center. They can also secure accessories for you.

Your new TEAC A-6300 Tape Deck has been manufactured under the strictest quality control procedures. Each unit has been thoroughly checked at the factory. Should any damage have been incurred during transit or should you have any doubts as to its performance, contact your dealer as soon as possible.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

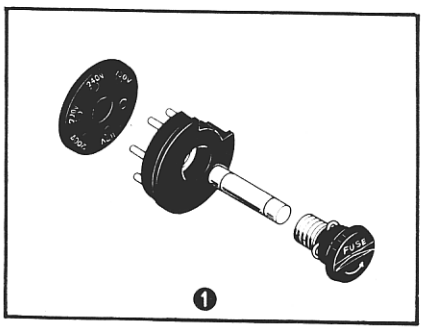
WARRANTY

* Warranty period is described in the enclosed Warranty card, read the card for complete details.
* For repairs after expiration of the warranty period, a service charge will be made in addition to the price of repair parts.
* Although the unit may still be under the Warranty period, you may be charged for repairs made necessary by misuse or damage incurred as a result of improper operation.

Keep the original packing. You may need the original carton to protect this unit for moving or storage. If this unit is returned for servicing, you will be responsible for shipping damage if it was improperly packed.

Confirming AC line voltage & frequency

This unit is factory set to be used only with the AC voltage and frequency that is specified on the label affixed to the rear connection panel of this deck. However, since substantial difference of tape speed can result if the deck is improperly set to match the line frequency (60/50 = 120; 20% higher, 50/60 = 87.7; 16.3% lower), the recording and playback compatibility will be lost. It is, thus, highly necessary to reconfirm the preset power requirement prior to operation. If they do not match, it is essential that you make the following changes or that you contact a TEAC Authorized Dealer or Service Station to have this deck adjusted to match the power line voltage and frequency where deck will be used.



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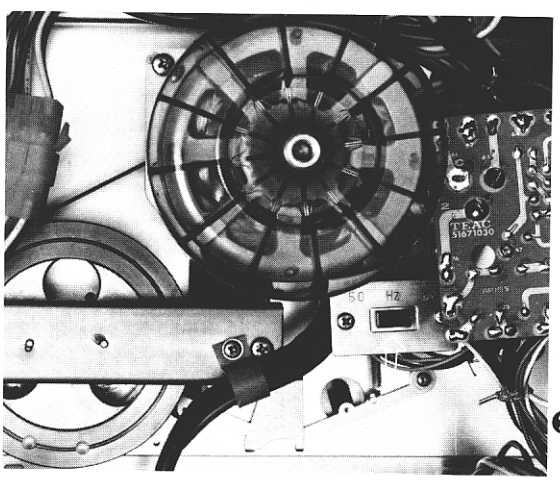
Voltage conversion

To change the voltage, first unscrew the fuse installed in the center of the voltage selector plug. Pull out the plug and reinsert it so that desired voltage shows in the cut-out. Reinstall the fuse. ❶

Frequency conversion procedure

1) Disconnect the power cord and all connecting cables.
2) Take off the rear cover of the unit by removing 6 screws holding it. The right side-panel may also be removed for your convenience.
3) When converting from 50 to 60 Hz, reposition the capstan belt as illustrated.❸
4) The frequency selector switch must match the frequency of the power line.❷
5) Reinstall rear cover and side panel.



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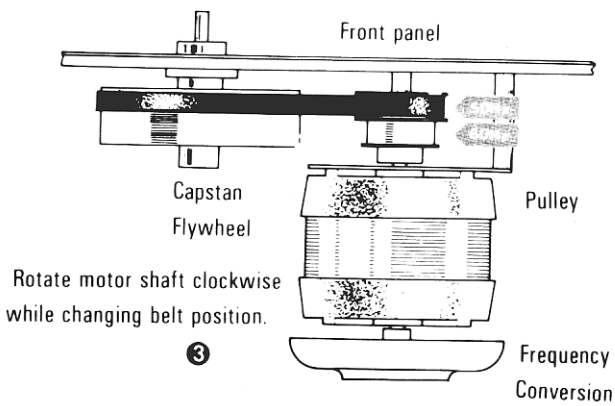

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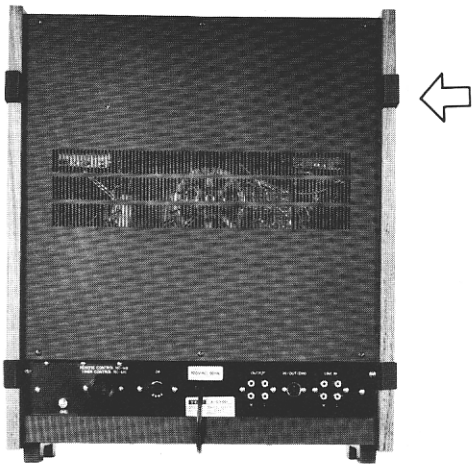
Environmental Precautions

check these precautions before beginning to operate this deck



MOUNTING POSITION

This deck may be used in either the up-right or the horizontal position. The up-right position is preferred, however. For horizontal operation always attach the mounting spacers, furnished with the standard accessories, to protect the connections as well as to insure adequate ventilation.

Tape storage and handling

Magnetic tape recordings are superior to phonograph discs because, with proper care, they can be kept and replayed for many, many years without degradation. During playback, the biggest danger to the recording is a magnetized or dirty point on the deck, such as a head or capstan. Care for the recording and the tape must be continued even after playing it by following these guides:

Protect the tape from dust, keep it in the plastic bag and the original carton.

Protect the tape from temperature extremes; avoid freezing temperatures, direct sunlight and heat radiators.

Protect the tape from stress; tremendous pressure is built-up on the inner windings of tape. This pressure is acceptable unless you apply additional stress by bending or squeezing the sides of the reels. This problem is increased if the windings are irregular. Quite frequently starts and stops will cause uneven winding pressure and the tape will be unevenly wound from side to side within the reel. Slight pressure on the sides will then break or crack the edge of the tape. Therefore, always prepare your tapes for long-term storage by re-winding them using the playback operating speeds. The fast forward or rewind modes apply somewhat more tension on the tape.

Protect the tape from strong magnetic fields; just as a bulk eraser will degauss recorded material, so might a strong magnet, electric motor, coil or transformer affect the recording.

ENVIRONMENTAL CONDITIONS REQUIRED:

The TEAC A-6300 is well constructed, and adaptable to a wide range of enviromental conditions. However, it is still an electronic device with limits to be considered. To prolong the life of your new deck, pay attention to the following factors when you install and operate the deck.

CONSTANT HIGH TEMPERATURE LOCATIONS:

Do not operate this unit near heating appliances, on top of an amplifier, or in direct sunlight. Temperature extremes will ultimately not only cause degradation of sound quality, but will also shorten the useful operating life of the unit. Avoid temperatures higher than 100°F (38°C).

EXTREME LOW TEMPERATURE: in such locations, lubricants will harden and satisfactory operation cannot be expected. Operation will be sluggish and an overload may be placed on the drive motor. Avoid temperatures lower than 40°F (5°C).

HIGH HUMIDITY LOCATIONS: will shorten equipment life due to corrosion and possible fungus growth on printed circuit boards.

DUSTY ENVIRONMENTS: your TEAC deck is a precision machine and as such should be protected from dust. Operation in a dusty atmosphere will result in excessive tape head wear. Your tapes should also be kept dust-free.

FLUCTUATION OF THE SUPPLY VOLTAGE:

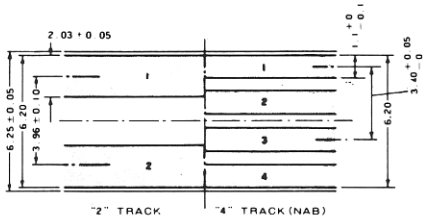
should you be in an area where line voltage fluctuation is severe, the use of a voltage regulator may be advisable.

About tape tracks & channels

About tape tracks and channels

A blank tape, of course, has no tracks on it. Until it is recorded, the tape could be used for any of the normal track configurations. The record head, record electronics and the procedure used in recording determine the track configuration. If the record head records the same signal on the entire width of the tape, the tape is called full (or single) track. If two different sections of the width of the tape are recorded separately it is called half (or two) track. If four sections are recorded separately, it is called quarter (or four) track.

In monophonic recording, each available track is recorded independently of the other tracks. In stereo recording, 2 tracks (2 channel stereo) or 4 tracks (2 channel stereo) are recorded simultaneously. To get the full information off the tape during playback, the playback head and electronics should be compatible with the recorded tape configuration.



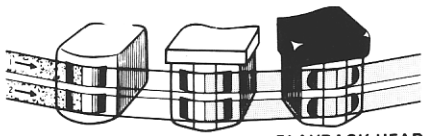
Playback compatibility

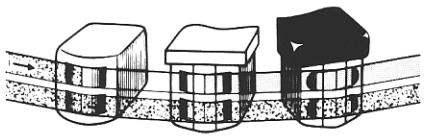
A four track stereo tape deck can replay both 4 track and 2 track tapes and from the standpoint of compatibility has the widest possible range of utilization. When playing a 2 track stereo tape on a four track machine, track #1 will be completely covered by the head. Track #2 will be slightly misaligned but stereo can still be enjoyed simply by compensating for the slight loss of track #2 volume with the controls. On the other hand, sounds recorded on a four track tape normally cannot be played on a two track tape deck, as both track #1 and #2 will be reproduced together resulting in mixed, unintelligible sound.

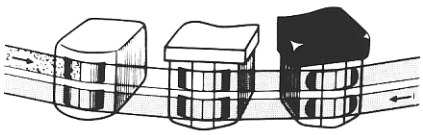
2-track stereo recording

Initially, 2-track stereo was used mainly by broadcasting stations and professional recording studios. More recently home recordists also switched to 2-track stereo for the advantages 2-track stereo recording has over 4-track stereo recording.

The upper track is called track 1 (Left channel). The lower track is called track 2 (Right channel). Using this method, both tracks are recorded simultaneously and in synchronization with each other.





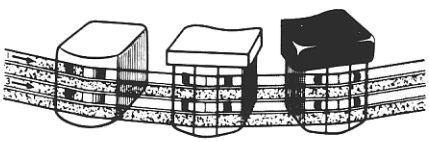


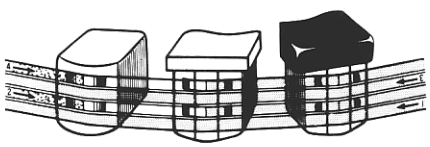
2-track monophonic recording

Use only the left channel and record to the end of the tape. Interchange reels and turn over tape. Then record again still using the left head. In this way, both track #1 and #2 are recorded, but in opposite directions.

4-track stereo recording

In this mode, two tracks are recorded simultaneously. On the first pass through the tape tracks 1 and 3 are used. The reels are then interchanged and the other two tracks, 2 and 4, are recorded. The left channel sounds will thus be recorded on tracks 1 and 4 and the right channel sounds are recorded on tracks 3 and 2. (The recording heads of the A-6300 are designed exclusively for professional type 4-track recording.



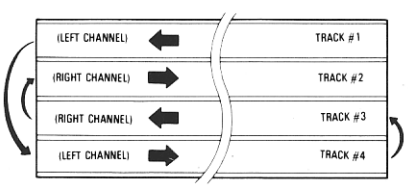


4-track monophonic recording

Each of the four tracks, in this mode, are recorded individually. At the end of each pass through the tape, the reels are interchanged and the next track recorded for a total of four passes through the tape. Track 1, 4, 3 and then 2 are recorded in succession as shown in the illustration. Track 1 and 4 are recorded using the left channel and track 2 and 3 use the right channel.

4-track monophonic recording offers maximum playback time but without the benefit of stereo effect reproduction.

4-TRACK MONOPHONIC RECORDING TRACK SEQUENCE DIAGRAM



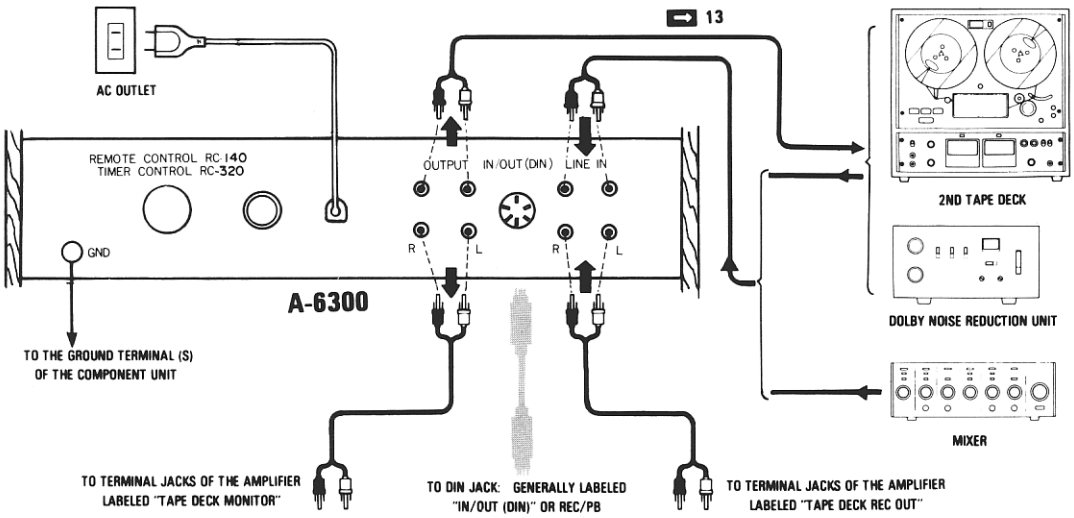
(INDICATES RECORDING OR PLAYBACK TRACK SEQUENCE.

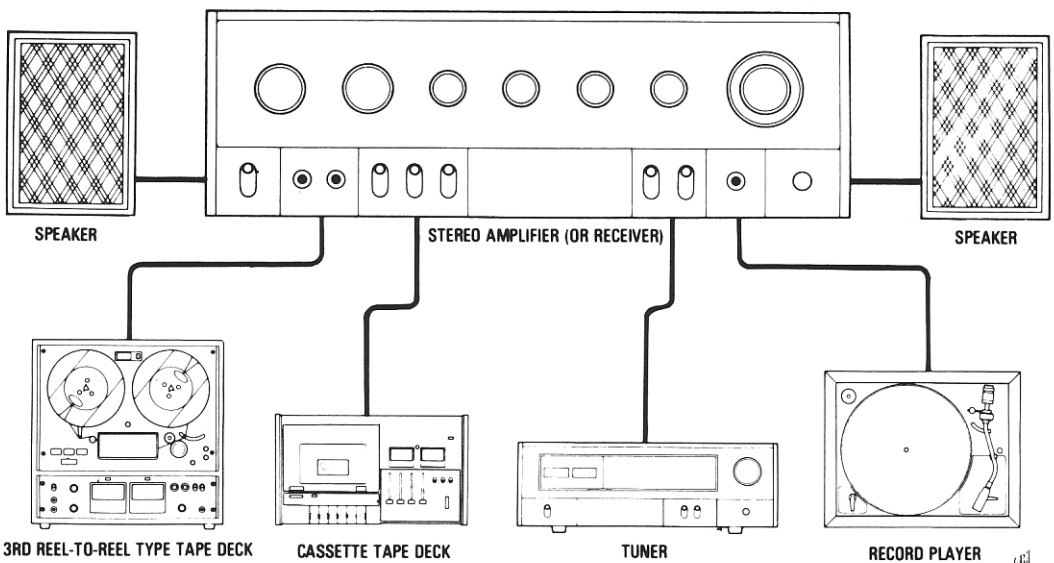
* CURVED ARROWS INDICATE WHEN TAPE REELS SHOULD BE INTERCHANGED TO PROCEED TO NEXT TRACK.

* STRAIGHT ARROWS INDICATE DIRECTION THAT SIGNAL IS RECORDED ON TAPE (OPPOSITE TO ACTUAL TAPE MOVEMENT).

System Connections

Before making or changing interconnections to your system, remove all AC power. After interconnections are properly made (and rechecked) reapply AC power.





To playback the recorded tape

As a standard feature, two pairs of output jacks are provided. One pair can be used to connect your deck to an amplifier (or receiver), with the other pair for alternate uses.
To establish a system hookup use the supplied INPUT/OUTPUT Pin patch plug cables between output terminals of the deck and the TAPE MONITOR or AUX input terminals of the amplifier.

To record

Also use the pin plug cables from the TAPE REC OUT jacks of your amplifier to the LINE IN jacks of the deck.

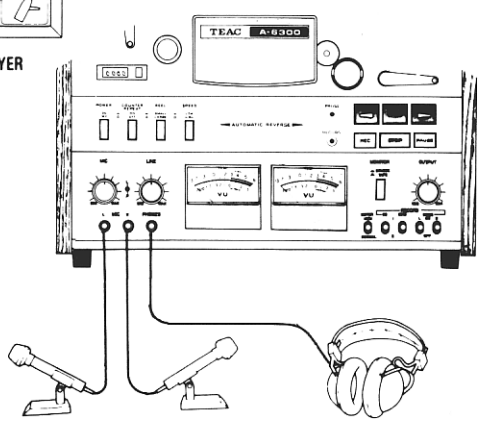
Two color channel identifiers

A white colored pin sleeving is provided for the left channel of the input and output terminals of your deck and red colored sleeving is provided for the right channel. Match these colors coded terminals to the pin plug cables and the amplifiers to help you make correct connections that are quick and easy.

DIN input/output connector jack

Accepts the Standard DIN plug cable and simply carries both input and output signals in one cable. However, never connect both DIN type cable and the supplied pin plug type connectors simultaneously to the deck. Audio problems (i.e. undesirable oscillations or lower signal-to-noise ratio, etc.) are often encountered when both types of inputs are used.

MIC & Headphone connection



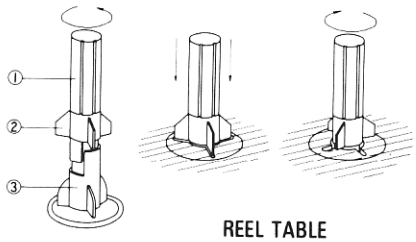
Loading reels & threading tape

"QUIK-LOK" Reel holders

Always secure these reel holders before operating the deck to assure adequate, solid support for the tape reels. Install the (supplied) adapters to the reel table (see below) before mounting 10-1/2" reels on the reel tables. Follow the procedures below for mounting 7" reels or the adapters onto the deck. Numbers given refer to the illustration.

Procedure:

a. Rotate sections 2 and 1 of the reel shaft fully counterclockwise (↺ CCW).
b. Place the reel onto the reel shaft while slowly rotating the reel CCW to keep both tab sets in line.
c. When the reel is firmly seated on the reel table, turn section 2 then 1 fully clockwise to secure the reel firmly in place.
The tabs on section 2 of the shaft should be centered between the slots on the reel.



REEL TABLE

10-1/2" Reel adapter clamp

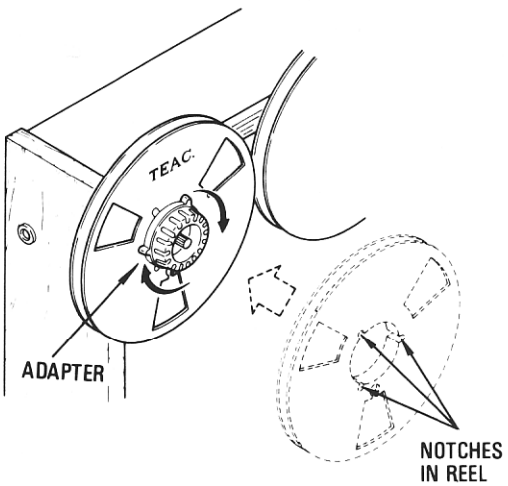
When using large diameter tape reels, use the supplied reel clamp adapter (TZ-612):

1. Secure the reel adapter clamp to the reel tables using the same procedure as above.
2. Turn the locking knob of the adapter fully CCW.
3. Align the 3 notches in the 10-1/2" reel hub with the 3 pair of detents on the adapter and push the reel all the way onto the adapter.
4. Turn the locking knob of the adapter fully CW until the reel is firmly secured to the adapter.

When removing the reel from the adapter, turn the locking knob CCW and use both hands to carefully pull the reel off the adapter.

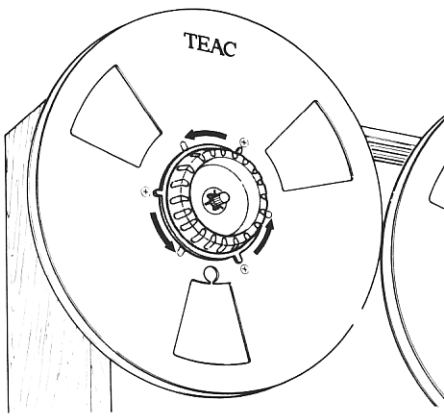
Installation

DIAGRAMⒶ



Removal

DIAGRAMⒷ



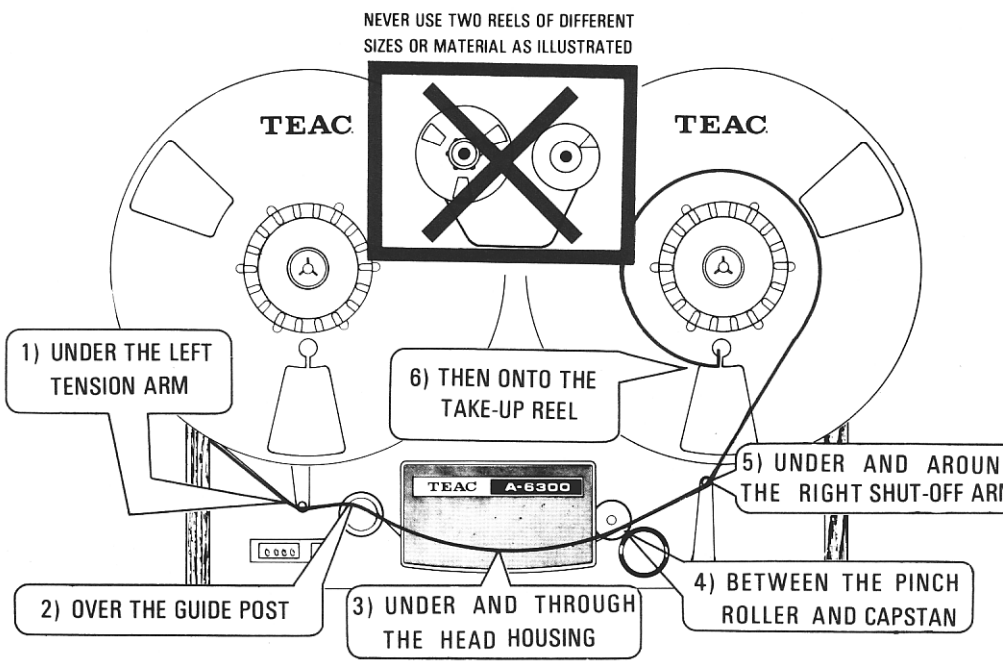
Threading the tape

Place the full reel of tape onto the left reel table. Secure the reel holder. Place an empty take-up reel on the right reel table. Secure the reel holder as described above. Note that the tape must leave the full reel on the left side.

Unwind (pull out) carefully approximately 30 inches (75 cm) of tape from the supply reel. Thread this tape in the following manner:

Secure the end of the tape to the take-up reel by holding the end of the tape in the slot while rotating the reel several turns CCW (counterclockwise).

Continue rotating the take-up reel until the tape is no longer loose. Correct tension will raise the shut-off arm from the 3 o'clock position to the 12 o'clock position.


NEVER USE TWO REELS OF DIFFERENT SIZES OR MATERIAL AS ILLUSTRATED
TEAC
TEAC
TEAC A-6300
1) UNDER THE LEFT TENSION ARM
2) OVER THE GUIDE POST
3) UNDER AND THROUGH THE HEAD HOUSING
4) BETWEEN THE PINCH ROLLER AND CAPSTAN
5) UNDER AND AROUN THE RIGHT SHUT-OFF AR
6) THEN ONTO THE TAKE-UP REEL

Basic recording & play back

How to record and playback

The procedures described herein are aimed at providing a basic understanding of the methods and "how-to's" of recording and reproducing music. In this section, we feel it is better to limit the instructions to basic sequences needed to record and playback programs from FM broadcasts through a tuner (or receiver), or a stereo amplifier of your system. Further information about advanced recording techniques i.e., recording with microphones, mike and line mixing etc., is given in the text on page 15.

4-Track Monophonic Record/Playback

As described on page 5, use each channel as designated in the sequence of track #1, #4, (left channel), #3 and #2 (right channel). Preset and other functions should follow in the table shown below. Other procedures are the same as given elsewhere.

➡ 5

SEQUENCE	PLAYBACK TRACK	SIDE OF REEL FACING YOU	VU METER BE USED	OUTPUT CONTROL
FIRST PASS	#1	SIDE A	LEFT	LEFT UP/RIGHT DOWN
2ND	#4	SIDE B	LEFT	LEFT UP/RIGHT DOWN
3RD	#3	SIDE A	RIGHT	RIGHT UP/LEFT DOWN
4TH	#2	SIDE B	RIGHT	RIGHT UP/LEFT DOWN

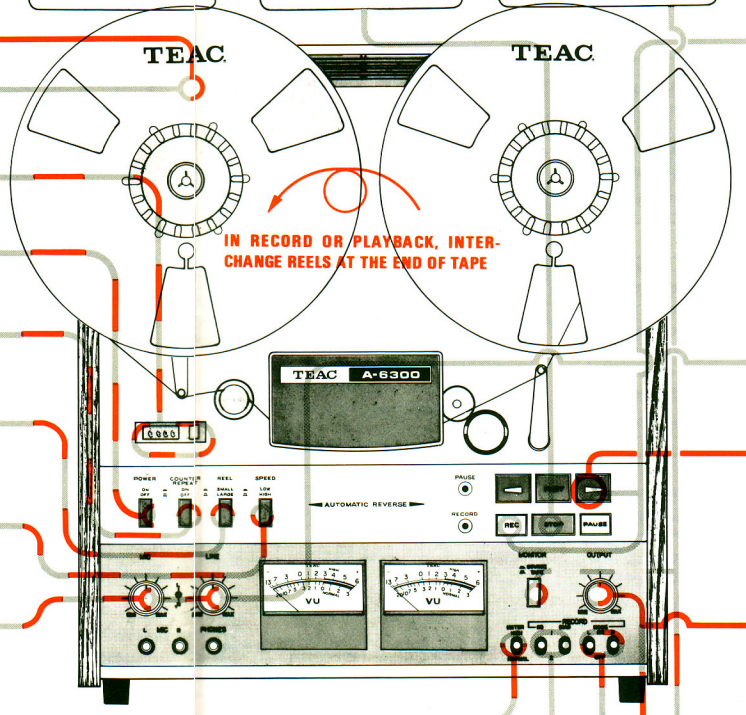
DURATION AVAILABILITY

Number of trip/ track # being used		Stereo				Monophonic	
		ONE-WAY		ROUND-TRIP		1/4 TRACK, DOUBLE ROUND-TRIP	
TAPE SPEED / REEL SIZE, TAPE THICKNESS & LENGTH		19 cm (7-1/2)	9.5 cm (3-3/4)	19 cm (7-1/2)	9.5 cm (3-3/4)	19 cm (7-1/2)	9.5 cm (3-3/4)
5"	#100 (1.5 mil) 185 m (600 ft)	15 mins.	30 mins.	30 mins.	60 mins. (1:00 hr.)	60 mins. (1:00 hr.)	120 mins. (2:00 hrs.)
	#150 (1 mil) 277 m (900 ft)	23 mins.	45 mins.	45 mins.	90 mins. (1:30 hrs)	90 mins. (1:30 hrs.)	180 mins. (3:00 hrs)
7"	#100 (1.5 mil) 370 m (1,200 ft)	30 mins.	60 mins. (1:00 hr.)	60 mins. (1:00 hr.)	120 mins. (2:00 hrs.)	120 mins. (2:00 hrs.)	240 mins. (4:00 hrs.)
	#150 (1 mil) 555 m (1,800 ft)	45 mins.	90 mins. (1:30 hrs.)	90 mins. (1:30 hrs.)	180 mins. (3:00 hrs.)	180 mins. (3:00 hrs.)	360 mins. (6:00 hrs.)
10-1/2"	#100 (1.5 mil) 740 m (2,400 ft)	60 mins. (1:00 hr.)	120 mins. (2:00 hrs.)	120 mins. (2:00 hrs.)	240 mins. (4:00 hrs.)	240 mins. (4:00 hrs.)	480 mins. (8:00 hrs.)
	#150 (1 mil) 1,100 m (3,600 ft)	90 mins. (1:30 hrs.)	180 mins. (3:00 hrs.)	180 mins. (3:00 hrs.)	360 mins. (6:00 hrs.)	360 mins. (6:00 hrs.)	720 mins. (12:00 hrs.)

NOTE: Records and FM broadcasts may be recorded for your individual pleasure and enjoyment but, generally, reproduction for a third party or group is strictly prohibited without permission from the Copyright holder.

One of the advantages of magnetic tape over phonograph records is that it can be recorded over and over again. This raises the question of how to remove the previous recording.

As illustrated on page 16 there is an erase head located on the left side of the head assembly. Its function is to purge the two tracks of all previous recording by means of a strong alternating magnetic field applied immediately before the tape reaches the record head. This is done automatically whenever you record. More complete erasure is provided by a Bulk Eraser such as TEAC's E-2, which completely degausses an entire reel of tape in seconds. Bulk erasing is necessary if the tape was recorded in another format or recorded at a very high level.



STEREO PLAYBACK

Load the recorded tape.

STEREO RECORDING

Connect the deck to the amplifier (or receiver) ➡ 6

Load blank tape. ➡ 7

COUNTER reset to 0000.

POWER switch — ON.

COUNTER REPEAT switch — OFF

REEL size selector — match reel size. ➡ 10

Tape SPEED selector — match pre-recorded tape / as desired

MIC and LINE inputs controls — minimum.

METER range selector — switch NORMAL. ➡ 14

RECORD-EQ, RECORD-BIAS switches — to correspond to type and brand of tape being used (see table page 11).

RECORD-MODE switches (L & R) — ON.

OUTPUT controls set 2-o'clock position

RECORD-MODE switches (L & R) — OFF.

OUTPUT — minimum.

FAST & REVERSE buttons — rewind to COUNTER 0000

STOP button — Depress to Stop recording.

MONITOR switch — TAPE position (the sound recorded on the tape can be heard).

STEREO RECORDING

REC and Play buttons — depress simultaneously to start recording.

Monitor switch of Amplifier (or receiver) — set TAPE monitor: source signals input can be heard.

LINE input controls — 0 VU for the loudest input signal.

Apply the source program signals (tune in the tuner or receiver, or place the stylus on the record desired).

Amplifier (or receiver) — place it in TAPE PLAYBACK mode.

MONITOR selector switch — SOURCE position.

STEREO PLAYBACK

Obtain adequate sound levels & tone quality as desired on the stereo amplifier (or receiver).

OUTPUT controls — raise until VU meter reads 0 VU at loudest peaks

PLAY button — depress to start playback

Amplifier (or receiver) — place in TAPE PLAYBACK mode

MONITOR selector switch — TAPE. ( )

More about recording

Choice of tape

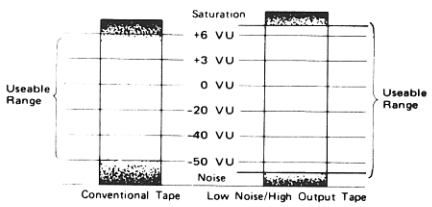
Most magnetic tape available commercially today is clearly marked with its specifications, such as thickness, type of base material, tape length (or reel dia.) and other characteristics. Since the TEAC A-6300 series units have been designed for use with low-noise types of tape as a standard reference, we recommend that you use the tape selection table printed on Page 11 for selecting the tape to be used.

If you use high quality tape, it is not always necessary to use a fresh tape for each recording. But, if you re-record on a 2-track deck a tape that was previously recorded in a 4-track format or recorded at a high input level, you may pick up unwanted residual (not fully erased) signals. To avoid this, bulk erasing of the whole tape using a bulk eraser, such as the TEAC E-2, is very necessary.

Several inches of tape at both ends of the reel often are unusable and may cause drop-outs. For this reason, we recommend that you leave about 10 revolutions of unrecorded tape on the reel at the beginning and end of your tape to avoid these possibly bad sections of tape. It is advisable to run the tape from the beginning to the end of the tape and back once before actually recording to eliminate possible tape problems, such as sticking layers, etc.

High level recording

A new low noise type of tape with an extended head room saturation point and wider dynamic range (inherent noise level point to saturation level of the tape) now being produced allows a higher recording level to be used. To take full advantage of this tape, increase the recording level as long as you stay within the saturation distortion limits of the tape. To do this, select HIGH range scale of the VU meters and set the record level to a +3 VU setting for the loudest passages of your signal input.



Recording level setting

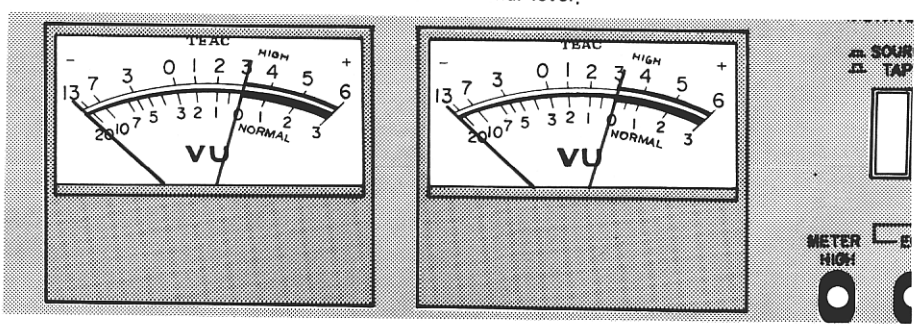
The setting of the record level is the most important factor to consider to obtain full advantage from the tape and top performance from your deck while keeping distortion to a minimum. For general purposes, we recommend that you preset the VU meter scale to NORMAL and adjust the input signal using the MIC or LINE controls. Generally read 0 VU at the maximum input signal level.

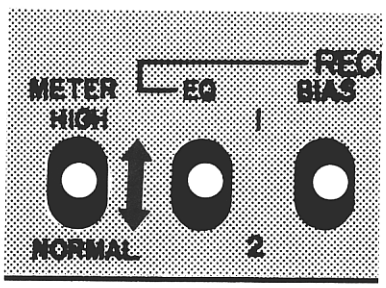
Experience will show that some kinds of music, especially that containing many loud, sharp peak sound such as drums or cymbals, can cause distortion of the recorded signal even though the RECORD level is around 0 VU. For those situations it is highly recommended that the RECORD Level be reduced even below 0 VU to reduce distortion.

REMEMBER: A standard VU meter is specially designed not to read peak signal levels so it is up to the judgement of the recordist to set the record level as high as possible and still try to avoid saturation of the tape due to peak signals. There is also a difference between live signals or sounds and some pre-recorded sound such as FM broadcast signals and records which often have peak limiting.

Precision tape reels and clean tape path

Warped, bent or poorly centered tape reels can cause damage to your valuable tapes and degrade both record and playback operations. Therefore, use of only quality reels is strongly recommended. A dirty tape path, such as head surfaces, capstan shaft, pinch roller or guides, often causes a degradation in deck performance, so this path must be kept clean. See page 16 for further information.

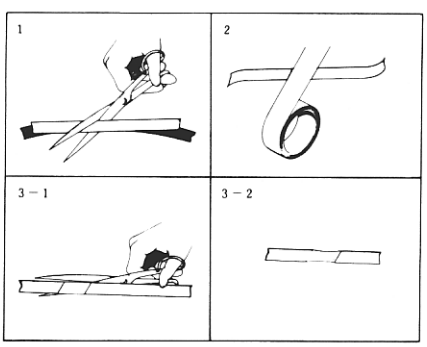




Tape splicing

Now begin splicing the tape to fill in the gaps between recordings or to add or take out portions of the program. Keep in mind the physical length of the tape for different time segments at different speeds, i.e., a 5 second segment requires 75" of tape at 15 ips speed or 37-1/2" of tape at 7-1/2 ips.

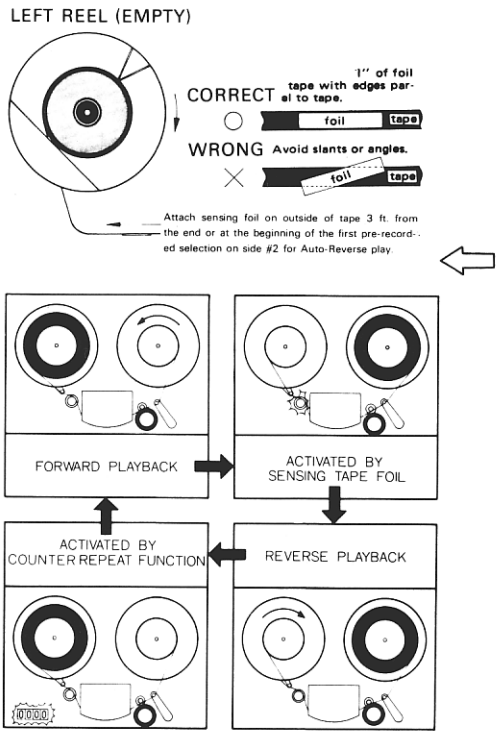
1. Carefully overlap ends of tape and cut through both layers at about a 45 degree angle.
2. Line up cut edges of the tape so tape extends in a straight path and the outside of both ends is up. Tape across cut.
3. Trim edges of spliced area to a slightly smaller width than normal tape to insure that tape adhesive doesn't extend past edges of tape.



Automatic REVERSE Playback

Upon conclusion of the first side of the tape, the tape direction will automatically reverse to begin playback of the other side. This reversing action is activated by a short strip of conductive sensing foil which must be applied as outlined below.

1) Use the FAST Forward mode to transfer all tape to the right-side reel, then locate the point where the first selection begins on Side 2 (REVERSE Playback).
2) Apply a short piece (about 1 inch to 1-1/2 inch-long) of Sensing Tape foil to the outside or base side of the tape. Center the foil so that no adhesive extends past the edge of the tape.
3) Rewind several feet of tape back onto the left-side reel. Begin Forward Playback and test the feature. When the foil reaches the Tape Guide Post, the transport should momentarily stop and then begin reverse Playback automatically. If reversing action does not occur, check these points on the chart page 17.


LEFT REEL (EMPTY)
CORRECT
1" of foil tape with edges parallel to tape.
foil
tape
WRONG Avoid slants or angles.
foil
tape
Attach sensing foil on outside of tape 3 ft. from the end or at the beginning of the first pre-recorded selection on side #2 for Auto-Reverse play.
FORWARD PLAYBACK
ACTIVATED BY SENSING TAPE FOIL
ACTIVATED BY COUNTER REPEAT FUNCTION
REVERSE PLAYBACK
0000

COUNTER REPEAT Playback

Continuous playback of both sides of the tape is possible when auto-reverse sensing foil is installed and the COUNTER REPEAT switch is ON. When the index COUNTER returns to approximately "0000" during REVERSE Playback, the deck will automatically resume Forward Playback.

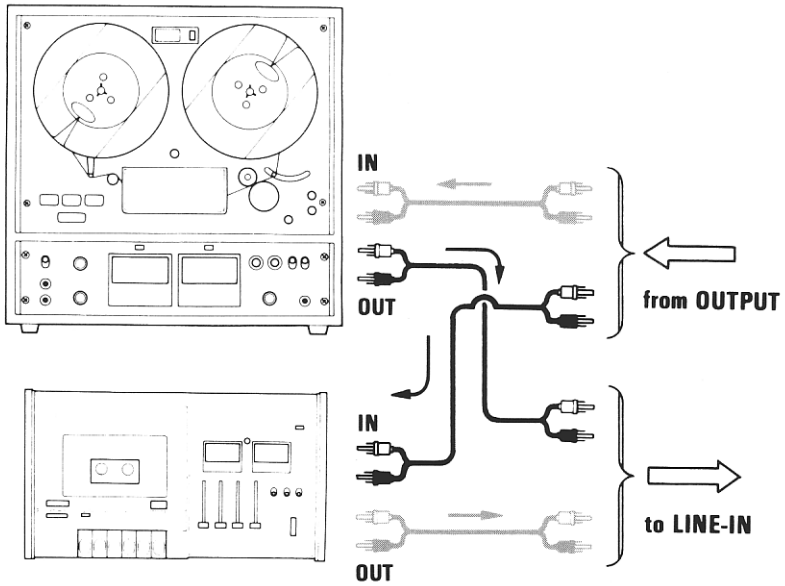
Step:

1) When threading the tape, wind a few extra turns on the take-up reel, then reset the index COUNTER to 0000.
2) After you begin Forward Playback depress the COUNTER REPEAT switch to ON.
3) Depress the STOP button when finished.

Dubbing

Deck-to-deck copying of tapes (dubbing) can be done without using an external amplifier. Operation is the same as standard record and playback procedure as described in the record and playback section.

Since the standard pin plug patch cords included with this deck are suitable for this hookup, be sure not to use the DIN plug at the same time.



This deck can be used as the "master" recorder with a second recorder used as the "slave" recorder. Connect the output of the A-6300 to the input of the slave recorder.

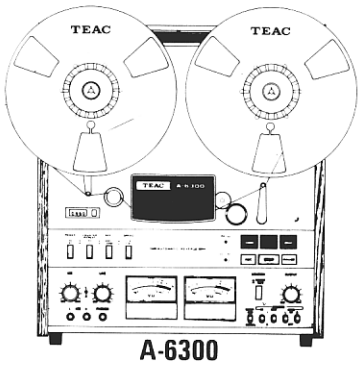
MIC Recording

Make connections per diagram on page 6. To prevent feedback from speakers, monitor signal using headphones. Recording operation is as explained on page 8/9.

MIC/LINE Mixing

You can mix music (through LINE IN) and your voice commentary (through MIC) to create interesting home movie or slide show background, or blend and mix other material by using MIC and LINE inputs and control levels for balance. No change of procedures is necessary but note the following: monitor the signal through headphones and select the SOURCE MONITOR mode to avoid voice delay.

CAUTION: If two tape decks are connected in the above configuration, and both decks are set to Source Monitor position, a positive feedback loop may occur. To avoid this loop decrease the OUTPUT control to minimum when monitoring the SOURCE signal.



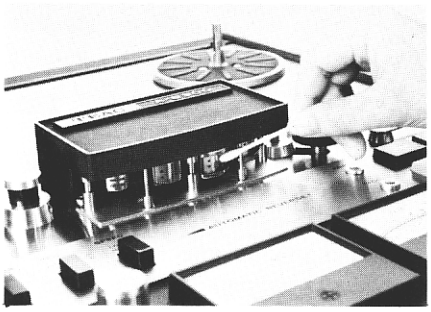
A-6300

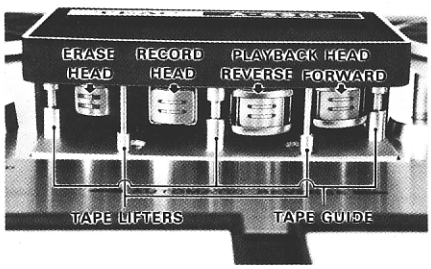
Cleaning

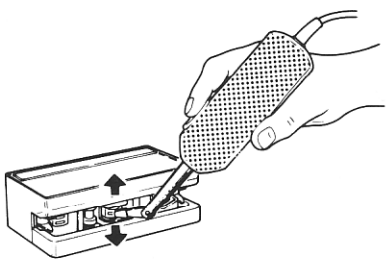
(Maintaining original performance)

Dirty heads will cause a reduction in high frequency response, irregular head wear, dropouts and, in extreme cases may cause the deck to be unable to record. The single most important point in tape deck maintenance is frequent and proper cleaning of the heads and tape path such as tape guides, tape lifters, tension arm guide, capstan shaft and pinch (pressure) roller. The heads should always be cleaned before making important recordings, and at least once for every eight hours of use. Commonly used cleaning fluids are chlorothane, ethyl alcohol, or fluid A in TEAC's Head Cleaner Kit (optional, TZ-261). Cleaning stick applicators are also provided in your Accessory kit. For all rubber surfaces use only fluid "B" from the kit as it is especially formulated for cleaning rubber surfaces. Do not use chlorothane, in this case, as it will cause deterioration of the rubber roller.

The newer tape formulations leave a gray or white residue which is difficult to detect. Regular cleaning schedules should be established rather than relying only on visual determination. For front panel and case face cleaning, a polisher kit is also available from TEAC (optional TZ-270).







Head demagnetization

During long periods of use, the heads may become slightly magnetized. As a result, high frequency response will decrease, noise will develop, or in extreme cases, the high frequencies will drop, or noise will be introduced into your valued pre-recorded tapes. To keep your deck operating with its original fidelity the heads should thus be degaussed at least once for every 50 hours of use, with i.e., TEAC model E-3 Head Demagnetizer. Places specified for degaussing include each head, capstan shaft and guide posts. Before proceeding with the following steps move all the pre-recorded tapes sufficiently away from the degaussing area.

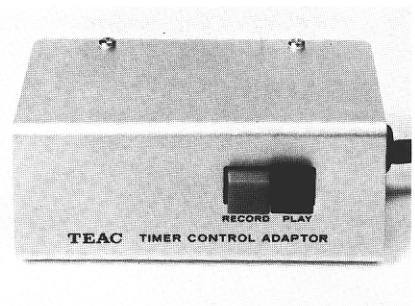
1. Turn OFF power to the deck.
2. Slide the switch of E-3 ON, bring the tip close to the head and slowly move it up and down four or five times.
3. Slowly draw it away from the head.
4. After finishing all points, turn OFF power to the demagnetizer only after it has been drawn at least 12 inches (30 cm) away from the heads.

More about recording & playback -continued-

Timer controlled record/playback

The TEAC Timer Control Adapter, RC-320, is sold separately from the recorder as an accessory. It can be connected to the recorder for automatic timed control of the RECORD and PLAYBACK functions of the deck. During your absence or while sleeping, your favorite FM program can be recorded; or awaken yourself to a recording of a favorite song or music.

Carefully read the operating instructions enclosed with the Timer Control Adapter, which explain how to connect it to the deck, how to prepare the deck and set record levels for automatic, timed recording. After setting the timer control, push the RECORD or PLAYBACK button as desired. When the timer reaches the designated time, record or playback will be started automatically when electricity is provided by the AC clock timer control.



Remote controlled operation

TEAC's optional accessory RC-140 Remote Control Adapter gives you total control over the A-6300 transport controls from up to 15 feet away. Even recording and PAUSE can be engaged from the comfort of your easy chair. Remove the dummy plug on the rear of the deck to install the RC-140 plug. Follow the instructions supplied with the Adapter. This accessory may be left connected while you use the controls on the A-6300.

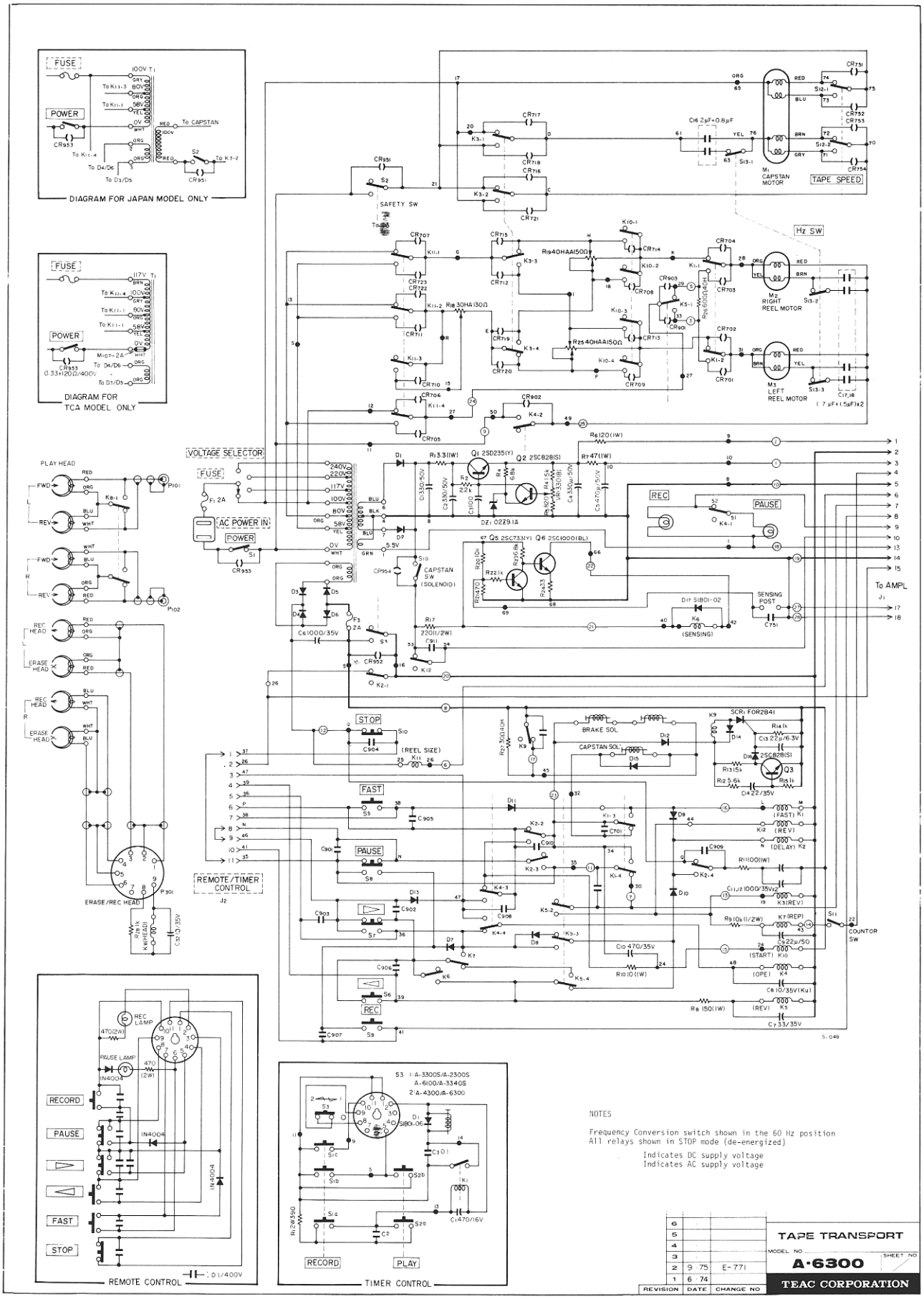
Punch-in recording or "running splice"

While the tape is being played, set the RECORD MODE switches (L & R) to ON; then simultaneously depress both the REC and ▶ button and the deck will begin recording from that point, thus avoiding the stop mode. This method permits very smooth recording starts, avoiding tape bounce (and resultant problems), and is especially convenient for electronic editing.

Corrective Action Guide

PROBLEM	CAUSE	CORRECTIVE ACTION
TAPE TRANSPORT		
Completely inoperative, VU Meter lamps not illuminated	Power cord loose, not connected	Connect power cord
	Fuse blown	Replace fuse, 2nd time, see service center
Capstan does not rotate (tape does not move). VU Meter lamps illuminate	Auto-shutoff arm not upright	Correct the arm position and/or rethread the tape
Pinch roller will not engage	Dummy Plug not inserted in the Remote Control socket.	Insert Dummy Plug or Remote Control Unit
Tape squeal noise	Tape rubbing reel	Reels not properly installed. Reset reels
	Pinch roller dry or tape needs lubrication (silicone)	Use tape lubricating cloth to apply silicone lubrication to the entire tape or replace the tape
PLAYBACK OPERATION		
No Sound	Disconnected Audio cord	Check and secure connections on the deck and stereo amplifier system
	MONITOR Switch mis-positioned	Place MONITOR Switch to TAPE
	OUTPUT Level too low	Increase OUTPUT Level Control
Poor sound quality	Dirty tape heads	Clean heads. Use TEAC TZ-275 (supplied) or TZ-261 or equivalent
	Decayed or defective tape	Replace tape
Unstable sound (Wow/Flutter, pitch changes in signal)	Pinch roller dirty	Clean with TEAC rubber Cleaning Fluid (TZ-261B)
	Dirty tape path	Clean entire tape path with head cleaner
	Tape rubbing against reel	See above for tape squeal noise
Deck does not go into Auto-Reverse Playback	Sensing foil not affixed or affixed improperly	See instruction on page 15
	Dirt or debris on sensing elements in tape guide post	Clean post
RECORDING OPERATION		
Does not record, cannot hear audio at SOURCE MONITOR position. (VU Meter does not indicate	Input cable loose or not connected	Check cord at deck and at stereo amplifier
	INPUT Level too low	Increase INPUT Level controls
Does not record, cannot hear audio at TAPE MONITOR position	OUTPUT Level too low	Increase OUTPUT Level setting
	Dirty tape heads	Clean heads
Does not record using MIC input (or DIN IN)	MIC ATT not set properly	Reset MIC ATT Switch using procedure on page 14.
Sound quality is low, dull, too much tape hiss, etc	Dirty tape heads	Clean heads
	Decayed or defective tape	Replace tape
	Insufficient INPUT Level Heads or tape path magnetized	Increase MIC or LINE INPUT Level Demagnetize tape path and heads
	BIAS/EQ switches not set properly	Set BIAS/EQ switches to match tape
Distorted or garbled sound	Overmodulation from excessive INPUT Level	Reduce the INPUT Level setting If using mikes, set proper MIC ATT Level

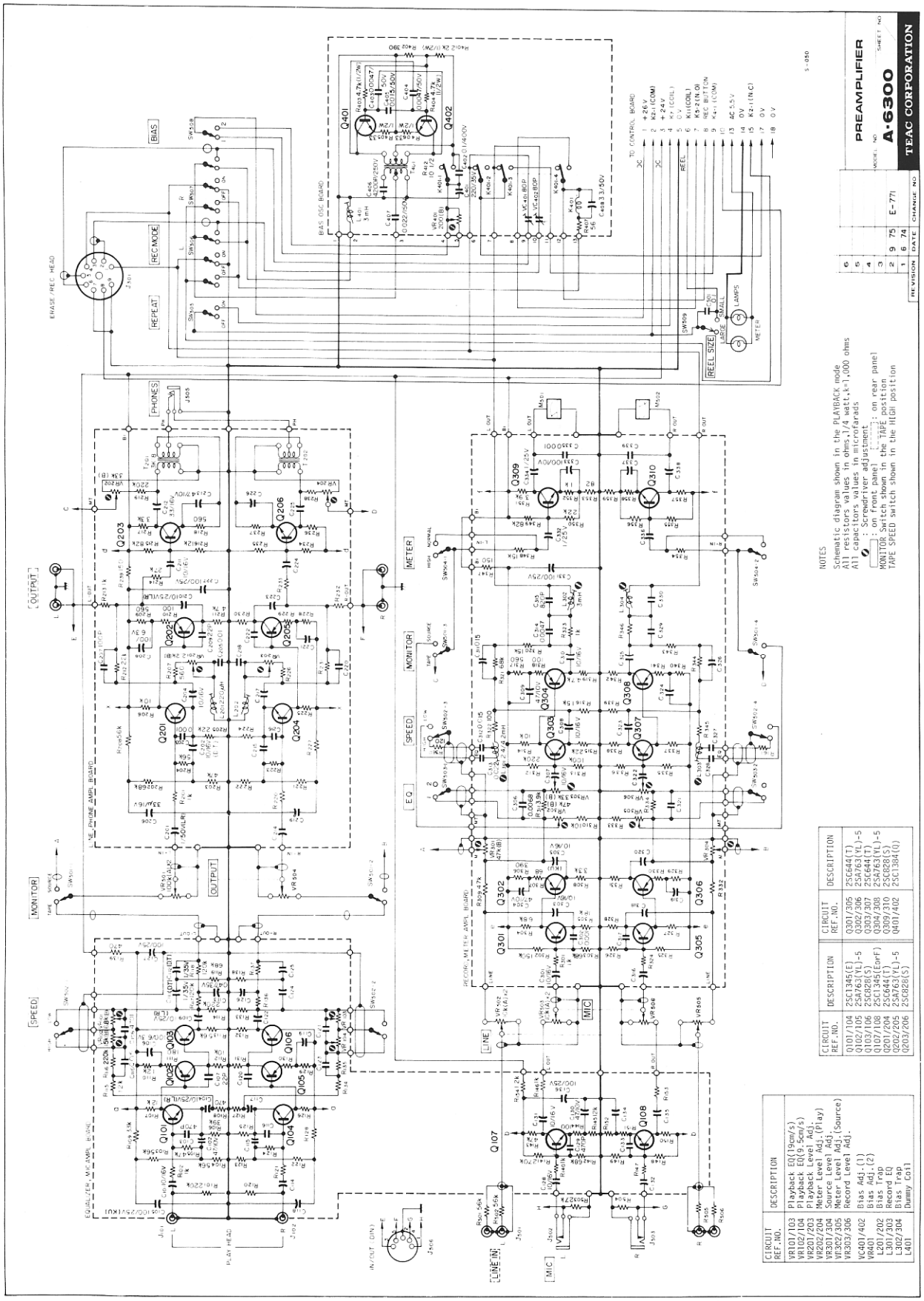
TAPE TRANSPORT



REVISION	DATE	CHANGE NO
6		
5		
4		
3		
2	9-75	E-771
1	6-74	

TAPE TRANSPORT
MODEL NO A-6300
SHEET NO
TEAC CORPORATION

AMPLIFIER SECTION



CIRCUIT REF.NO.	DESCRIPTION
VR101/103	Playback EQ(19cm/s)
VR102/104	Playback EQ(9.5cm/s)
VR201/203	Playback Level Adj.
VR202/204	Meter Level Adj.(Play)
VR301/304	Source Level Adj.
VR302/305	Meter Level Adj.(Source)
VR303/306	Record Level Adj.
VC401/402	Bias Adj.(1)
VR401	Bias Adj.(2)
L201/202	Bias Trap
L301/303	Record EQ
L302/304	Bias Trap
L401	Dummy Coil

CIRCUIT REF.NO.	DESCRIPTION
Q101/104	2SC1345(E)
Q102/105	2SA763(YL)-5
Q103/106	2SC828(S)
Q107/108	2SC1345(E or F)
Q201/204	2SC644(T)
Q202/205	2SA763(YL)-5
Q203/206	2SC828(S)

CIRCUIT REF.NO.	DESCRIPTION
Q301/305	2SC644(T)
Q302/306	2SA763(YL)-5
Q303/307	2SC644(T)
Q304/308	2SA763(YL)-5
Q309/310	2SC828(S)
Q401/402	2SC1384(Q)

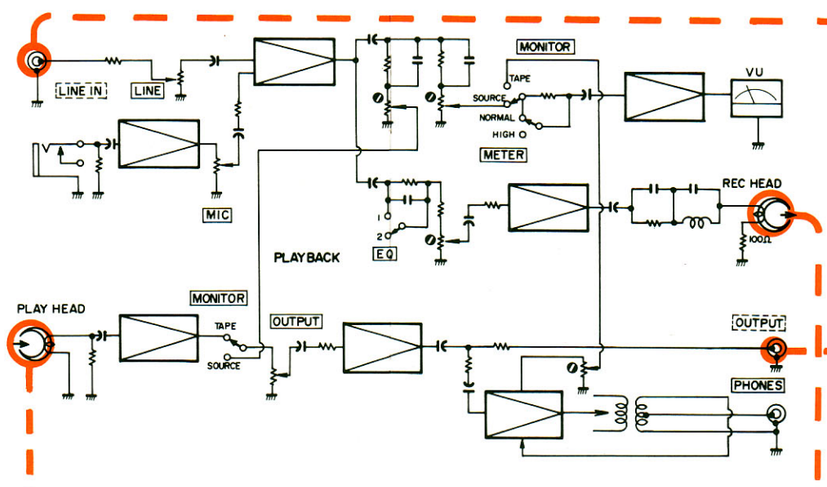
All about the TEAC A-6300

SPECIFICATIONS

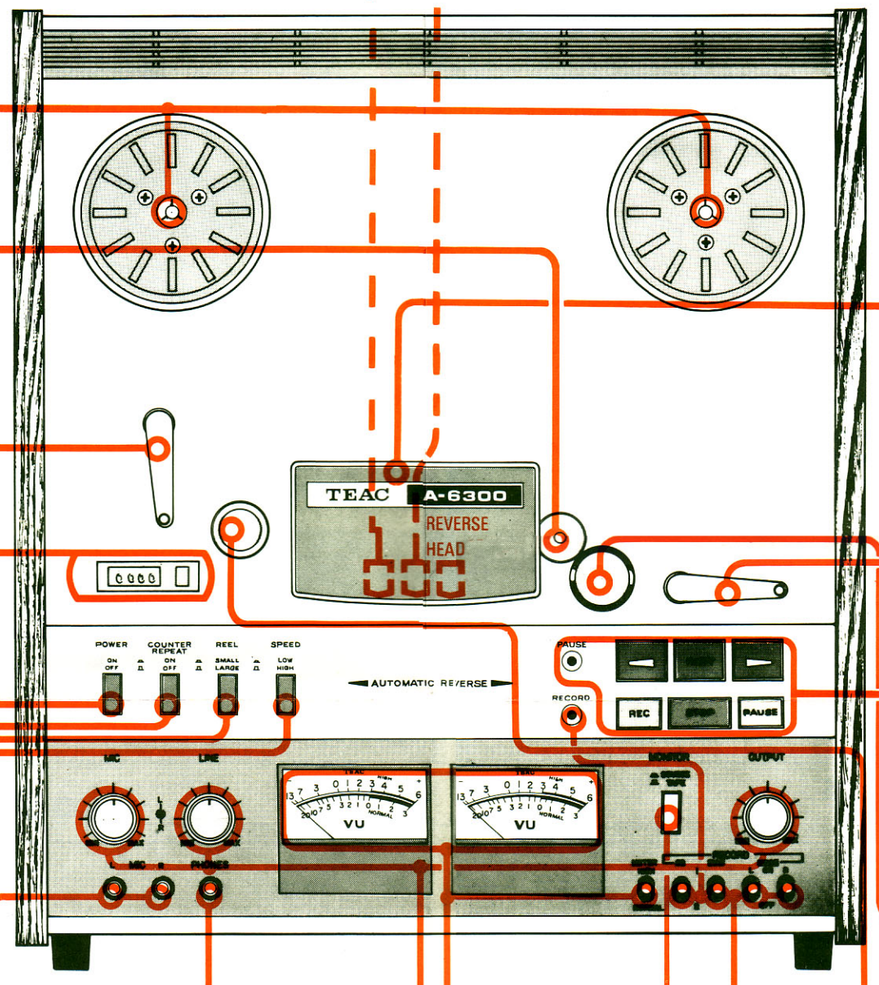
Track System	4-track 2-channel, stereo or mono
Heads	Four: erase, record, playback and reverse playback
Reel Size	10-1/2" and 7" (26 cm, 17 cm)
Tape speed	7-1/2 ips and 3-3/4 ips (19 cm/s, 9.5 cm/s): (±0.5%)
Motors	1 dual speed hysteresis synchronous capstan motor, 2 eddy current induction reel motors
Wow & Flutter (NAB Weighted)	0.06% at 7-1/2 ips (19 cm/s) 0.09% at 3-3/4 ips (9.5 cm/s)
Frequency Response (Overall)	30 – 28,000 Hz (40 – 24,000 Hz ±3 dB) at 7-1/2 ips 30 – 20,000 Hz (40 – 16,000 Hz ±3 dB) at 3-3/4 ips
Signal to Noise Ratio	58 dB (3% THD Level: weighted)
Total Harmonic Distortion (Overall)	1% at 1,000 Hz normal operating level
Stereo Channel Separation	50 dB at 1,000 Hz
Fast Winding Time	160 seconds for 1,800 feet (550 m-long tape)
Inputs	Line: 0.1V at 50,000 ohms Microphone: 0.25 mV/-72 dB at 600 ohms or more
Outputs	Line: 0.3V for load impedance of 10,000 ohms or more Headphones: 8 ohms
Power Requirements	100/117/220/240V AC, 50/60 Hz, 135W
Dimensions	440(W) x 520(H) x 210(D) mm or 17-3/8(W) x 20-1/2(H) x 8-1/4(D) inches
Weight	22 kg or 48-3/8 lbs net
Standard Accessories	Empty reel (10-1/2"), Reel clamp adapters, Input/output connection cord (pin-plug type), Oil, Fuse, Cleaning stick applicator, Silicone cloth, Rubber feet, Splicing tape, Sensing tape.

Specifications were determined using low noise/high output tape.
Improvements may result in specifications or features change without notice.
Photographs and/or illustrations may differ slightly from the appearance of your unit when production design improvements are incorporated.

BLOCK DIAGRAMS



LOCATION & USE OF CONTROLS

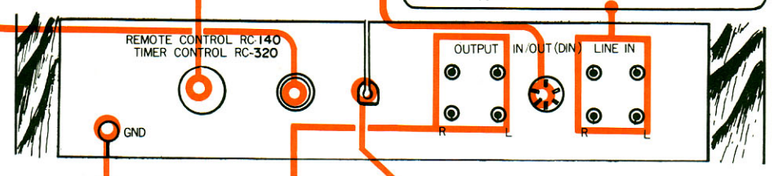


FUSE receptacle
Remove to replace the rated fuse.
Always disconnect the AC cord before attempting fuse replacement.
Always replace with a fuse of identical rating as shown on the rear panel label.

DIN IN/OUT socket
Accepts DIN Standard cable plug which carries both input and output wires.
(Note: use either DIN cable or pin cords but do not connect both types simultaneously.)

REMOTE (RC-120) and TIMER (RC-320) controls connector
When the dummy plug is removed, connection is provided for either the RC-120 or the RC-320 (optional accessories).

LINE IN (L & R)
Left and Right channel inputs for recording are connected to these jacks. Two are provided for each channel. Use pin cord cables included in the Accessory Packet or similar type.



GND (ground) terminal post
Provides grounding connection to other components if desired. ➡

AC POWER cord
Connects to the AC outlet.
Caution: Deck is factory set to voltage indicated on the rear of the unit. Do not connect this cord unless that voltage matches your local AC power.

OUTPUT terminals (L & R)
Left and Right channel outputs for listening through an amplifier are connected from these jacks. Two are provided for each channel. Use the pin patch cord cables similar to those included in the Accessory Packet. (See page 11 for output control information.)

"QUIK-LOK" reel holders
Provide secure mounting for reels on the reel table platform. ➡ 7

Capstan shaft
During recording and playback, the accurate rotating speed of this shaft acts to move the tape at the selected speed (HIGH or LOW) when the rubber surfaced pinch roller is engaged.

4-digit Index COUNTER with Reset button
Counter increases with forward tape movement and decreases with reverse tape movement.
This helps you easily locate programs on the tape. After the tape is loaded, reset counter to 0000 at the beginning of the recording to give simple cueing by taking note of the counter setting at specific locations during your recording. Also works in conjunction with the MEMORY switch.

Tape TENSION ARM
Acts mechanically to maintain proper tension and guides the tape; also quickly takes up slack during start and stop operations.

Head housing
Configuration of the heads for this A-6300 unit is shown below. The housing protects these heads from possible magnetic or static interference and from dust and debris to maintain original performance.

Tape movement and operating controls

FORWARD PLAY—
starts forward ➔ playback.

REVERSE PLAY
Selects playback of a tape in the reverse direction. This same function is also achieved when the AUTO-REVERSE Sensing post in the left tape guide contacts a foil strip on the tape.

FAST **FAST FORWARD—**
starts fast forward movement.

FAST **REWIND—**
starts tape in high speed reverse direction.

REC **RECORD—**
if you push these two switches while RECORD MODE switch(es) are ON, REC indicator will illuminate and deck begins recording.

REC PAUSE **RECORD/PAUSE—**
without moving tape, record electronics are activated. RECORD and PAUSE indicator lamps illuminate. When forward button ► is pressed, deck begins recording.

PAUSE **PAUSE—**
A temporary stand-by mode. If pushed while in RECORD mode, RECORD and PAUSE lamps come on and record electronics remain activated. If pushed while in PLAYBACK mode, deck stops.

STOP **STOP—**
stops tape movement, releases deck from RECORD or PAUSE mode and stops any control function.

Shut-off arm
The shut-off arm controls the power to the tape transport (electro-mechanical system that moves tape). When the tape holds this arm up and to the left, the capstan shaft rotates. If the tape should break or reach the end, the arm will move to the right and its associated switch will cut off power to the pinch roller solenoid; tape movement will stop, reel brakes engage and the capstan motor stops rotating.

POWER switch
Depress switch to apply power to the deck. The lights on the VU meters will light to show that power is ON and power will be supplied to the amplifier of the deck. Power is also applied to the shut-off switch. If tape is properly threaded holding the arm in place: power will be applied to the tape transport electronics. Depress POWER switch again and release it to shut off power.

PINCH PRESSURE ROLLER

COUNTER REPEAT
During REVERSE-Play, (if the COUNTER-REPEAT switch is ON), the index counter automatically causes the deck to go into the FORWARD-Play mode when it decreases past 0000. A continuous repetition of the tape is achieved by applying a sensing foil strip to the end of the first side.
In this way the tape reverses direction (forward to reverse) when the foil is sensed near the end of the tape and reverses direction again (reverse to forward) when the index counter passes 0000. Using these functions, endless playback can be enjoyed, automatically.

MIC Input jacks (L & R)
Connections for high fidelity microphones, 150 to 10,000 ohms acceptable.

PHONES jack
For 8-ohm stereo headphones.

Auto-REVERSE sensing post
The left tape guide post contains a dual pole sensing element which senses a foil strip marker on the tape for automatic reversing of the tape playback direction.

MIC level control
Recording input level adjustment is achieved with this control for a microphone recording. A white line is printed next to the switch at minimum position (7 to 9 o'clock) to warn you that mike input is too high and you should use more input attenuation for reducing the signal to avoid overdriving the input amplifier. DIN cord inputs are also controlled by MIC level controls. The MIC ATT should be set for 0 VU with DIN inputs.

LINE controls
Use this control for the signal level from a LINE input terminal (rear connection terminal) when the attached pin-plug patch cords are connected to a source such as a tuner, amplifier or another tape deck included in the system.

Dual concentric control knobs
Friction coupled level control knobs let you adjust both L and R channel simultaneously -a good feature in stereo mode. The knobs can also be adjusted separately by holding one knob and turning the other, useful for exclusive or monophonic control. ➡ 14

Memory marker guide rings on level controls
Transparent Marker Guide allows you to easily return to a desired preset recording level even in a dark room. Convenient "snap-stop" controls will let you feel when you reach preset level position.

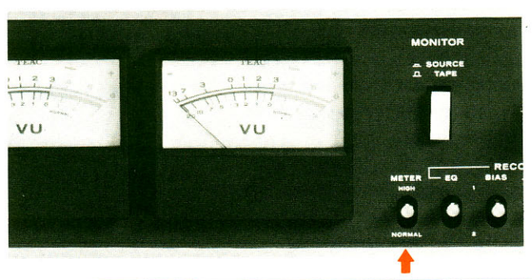
OUTPUT volume controls
The OUTPUT control works in conjunction with the Monitor Switch. When the Monitor Switch is in the TAPE position, the OUTPUT control is used to adjust the output signal from the tape to the DIN OUT, LINE OUT, VU meters and to the headphones. When the Monitor Switch is set to SOURCE, VU meters are independent of the OUTPUT level setting. This control has a Memory Marker Ring to allow you to easily return to a preset level.
The "true recording level" on the recorded tape is obtained at the output with the OUTPUT Controls at the 2 o'clock position.

REEL size selector
Either of two different sizes of tape reels can be used with this deck, the large size 10-1/2" reel or the smaller 7 reel. Set this switch to select the proper tape tension and motor torque to match the size of reels you will use.

METER range selector
Generally it is recommended that the record level be below 0 VU to avoid entering into the distortion domains of the tape. Recently however, new low noise tape with widened dynamic range has been developed that can be recorded with much highter record levels. To take full advantage of this improved tape it is sometimes desirable to record at a level above +3 VU. This is why TEAC has built in the capability to read up to +6 VU.

Just flip the METER range switch to HIGH range and the standard +3 VU limit is increased to +6 VU.

VU Meters
These large, dual scale meters allow accurate level reading in either playback or record mode. In HIGH scale meter reads up to +6 VU. In NORMAL scale meter reads the standard +3 VU. Use the scale as selected by meter range switch.



MONITOR selector
Selects the signal to be monitored at the PHONES jack. In SOURCE position the source input signal is heard. In TAPE position, the playback signal off the tape is monitored to let your hear the signal that is actually being recorded on the tape.

RECORD-MODE switches (L & R)
These switches select channel(s) to be recorded. For stereo recording, both must be ON. For monophonic recording either L or R switch, as desired, must be ON. During playback mode turn these switches OFF to further insure against accidental erasing or recording of your tape. (i.e., in case the RECORD button is pressed by mistake.)

Recommended tape and BIAS/EQ settings
Modern tape technology has produced low-noise tapes with a widened frequency response spectrum, higher S/N ratio and higher saturation point. To get full performance from these new tapes the A-6300 has dual, completely independent BIAS and EQ (equalization) switches.

Many of the tape formulations available have differing bias and Equalization requirements which must be considered independently as explained below.

RECORD-EQ
To get flat frequency response, wide dynamic range and best S/N ratio, set RECORD EQ switch to match the tape you are using according to the chart below.

RECORD-BIAS
The amount of AC bias applied to a tape with the input signal during recording affects the recording fidelity, and such parameters as sensitivity, distortion rate, S/N ratio and frequency response. This BIAS switch should be set to match the type of tape you are using according to the chart below.

EQ & BIAS selection & tapes

1 mil TAPES (for 2/4 track model)	Switch positions	
	EQ	BIAS
MAXELL UD-35 FUJI-FILM FG-150 SONY SLH Series	1	1
FUJI-FILM FB-151 TDK SD-150 BASF LP-35LH SCOTCH 212 MEMOREX 1800	1	2
SCOTCH 207 AGFA-GEVAERT PE-36	2	1

Tape SPEED selector
This selector switch allows selection of HIGH (7-1/2 ips) or LOW (3-3/4 ips) tape speed. For Playback of pre-recorded tapes, depress or release switch to select the speed to match the pre-recorded tapes. For recording, normally the HIGH speed is used for quality recording (especially to increase the high frequency response). The LOW speed is usually used to get more tape economy when high end frequency response is not a critical consideration, such as when recording speech or background music.